What is claimed is:

1. A suction-assisted tissue-engaging device adapted to be used in method of performing a medical procedure on body tissue accessed through an incision into a body cavity, comprising:

an elongated articulating arm extending between an articulating arm proximal end and an articulating arm distal end enclosing an arm vacuum lumen coupled with a vacuum port for drawing a vacuum through the arm vacuum lumen, the articulating arm adapted to be manipulated in a flexible state into an operative shape and changed into a rigid state maintaining the operative shape; and

a suction member coupled to the articulating arm distal end having a suction member vacuum lumen coupled with the arm vacuum lumen extending to at least one suction port adapted to be applied against the body organ, whereby vacuum drawn through the vacuum port provides suction at the suction port to engage body tissue.

2. The tissue-engaging device of Claim 1, wherein the arm vacuum lumen exhibits a vacuum leak when the articulating arm is in the flexible state and further comprising:

sealing means for sealing the vacuum leak as the articulating arm is changed from the flexible state to the rigid state.

3. The tissue-engaging device of Claim 2, further comprising:

tensioning means coupled to the elongated articulating arm adapted to be selectively operated to render the articulating arm in the flexible state enabling manipulation of the articulating arm into the operative shape, wherein the arm vacuum lumen exhibits a vacuum leak, and selectively operated to render the articulating arm in the rigid state maintaining the operative shape imparted to the articulating arm; and wherein:

the sealing means seals the vacuum leak as the tensioning means is operated to change the flexible state to the rigid state.

4. The tissue-engaging device of Claim 3, wherein the articulating arm further comprises:

an elongated flexible outer sheath having an outer sheath lumen extending between an outer sheath distal end coupled to the suction member and an outer sheath proximal end coupled to the articulating arm proximal end;

a plurality of interlocking articulating links within the outer sheath lumen, the articulating links each having a link proximal end and a link distal end and a link bore extending between the link proximal and distal ends, the link proximal and distal ends of adjacent articulating links shaped to provide end-to-end articulation with the link bores aligned; and

an elongated tensioning cable extending through the articulating link bores between a cable proximal end and a cable distal end proximate the suction member, whereby the aligned link bores provide the arm vacuum lumen alongside the elongated tensioning cable.

5. The tissue-engaging device of Claim 4, wherein the tensioning means is coupled to the cable proximal end and is selectively operable to release tension in the tensioning cable to render the articulating arm in a flexible state enabling manipulation of the articulating arm into an operative shape and to impart tension to the tensioning cable to draw the mating link proximal and distal ends together to render the articulating arm in a rigid state and maintain the articulating arm in the operative shape.

6. The tissue-engaging device of Claim 5, wherein the sealing means further comprises a resilient seal having a seal bore and is fitted into a seal seat of an articulating link or non-articulating link distal to the tensioning means with the tensioning cable extending through the seal bore, and the seal is compressed against the tensioning cable and seal seat preventing any vacuum leak proximal to the seal seat when the articulating arm is in the rigid state.

7. The tissue-engaging device of Claim 6, wherein the vacuum port extends from the link bore of an articulating link or a non-articulating link disposed distal to the seal seat that the resilient seal is fitted into.

8. The tissue-engaging device of Claim 7, wherein the resilient seal and seal bore are dimensioned with respect to the seal seat and the tensioning cable such that the resilient seal is compressible against the seal seat and the tensioning cable sufficient to reduce vacuum leak proximal to the seal seat as the tensioning cable is drawn proximally while the articulating arm remains in the flexible state allowing manipulation of the articulating arm into an operative shape.

9. The tissue-engaging device of Claim 6, wherein the resilient seal and seal bore are dimensioned with respect to the seal seat and the tensioning cable such that the resilient seal is compressible against the seal seat and the tensioning cable sufficient to reduce vacuum leak proximal to the seal seat as the tensioning cable is drawn proximally while the articulating arm remains in the flexible state allowing manipulation of the articulating arm into an operative shape.

10. The tissue-engaging device of Claim 1, wherein the articulating arm further comprises:

an elongated flexible outer sheath having an outer sheath lumen extending between an outer sheath distal end coupled to the suction member and an outer sheath proximal end coupled to the articulating arm proximal end;

a plurality of interlocking articulating links within the outer sheath lumen, the articulating links each having a link proximal end and a link distal end and a link bore extending between the link proximal and distal ends, the link proximal and distal ends of adjacent articulating links shaped to provide end-to-end articulation with the link bores aligned; and

an elongated tensioning cable extending through the articulating link bores between a cable proximal end and a cable distal end proximate the suction

member, whereby the aligned link bores provide the arm vacuum lumen alongside the elongated tensioning cable.

11. The tissue-engaging device of Claim 10, further comprising tensioning means coupled to the cable proximal end that is selectively operable to release tension in the tensioning cable to render the articulating arm in a flexible state enabling manipulation of the articulating arm into an operative shape and to impart tension to the tensioning cable to draw the mating link proximal and distal ends together to render the articulating arm in a rigid state and maintain the articulating arm in the operative shape.

12. The tissue-engaging device of Claim 11, wherein the distal suction member further comprises:

first and second distally extending stabilizer pods each having at least one suction port adapted to be applied against body tissue and coupled to the suction member vacuum lumen; and

spreading means operable when suction is applied through the suction ports to the body tissue and responsive to tension imparted to the tensioning cable to render the articulating arm in the rigid state for spreading the stabilizer pods apart to stretch the body tissue between the first and second suction pods.

13. The suction-assisted tissue-engaging device of Claim 11, wherein the distal suction member further comprises:

a suction member sub-assembly coupled to the cable distal end incorporating the suction member vacuum lumen coupled with the arm vacuum lumen and supporting first and second suction pods to extend distally substantially in parallel and spaced apart from one another each having at least one suction port coupled to the suction member vacuum lumen adapted to be applied against body tissue to stabilize body tissue between the first and second suction pods when suction is applied to the body tissue to facilitate performing a medical procedure; and

a suction member outer sealing sleeve extending over at least a portion of the suction member sub-assembly sealing the suction member vacuum lumen from vacuum leakage.

14. The tissue-engaging device of Claim 13, wherein the suction member sub-assembly further comprises spreading means operable when suction is applied through the suction ports to the body tissue and responsive to tension imparted to the tensioning cable to render the articulating arm in the rigid state for spreading the stabilizer pods apart to stretch the body tissue between the first and second suction pods.

15. The tissue-engaging device of Claim 1, further comprising:

tensioning means coupled to the elongated articulating arm adapted to be selectively operated to render the articulating arm in the flexible state enabling manipulation of the articulating arm into the operative shape and selectively operated to render the articulating arm in the rigid state maintaining the operative shape imparted to the articulating arm; and

wherein the distal suction member further comprises:

first and second distally extending stabilizer pods each having at least one suction port coupled to the suction member vacuum lumen adapted to be applied against body tissue; and

spreading means operable when suction is applied through the suction ports to the body tissue and responsive to tension imparted to the tensioning cable to render the articulating arm in the rigid state for spreading the stabilizer pods apart to stretch the body tissue between the first and second suction pods.

16. The suction-assisted tissue-engaging device of Claim 1, wherein the distal suction member further comprises

a suction member sub-assembly coupled to the cable distal end incorporating the suction member vacuum lumen coupled with the arm vacuum lumen and supporting first and second suction pods to extend distally substantially in parallel and spaced apart from one another each having at least one suction port coupled to the suction member vacuum lumen adapted to be applied against body tissue to stabilize body tissue between the first and second suction pods when suction is applied to the body tissue to facilitate performing a medical procedure; and

a suction member outer sealing sleeve extending over at least a portion of the suction member sub-assembly sealing the suction member vacuum lumen from vacuum leakage.

17. The tissue-engaging device of Claim 16, wherein the suction member sub-assembly further comprises means for spreading the stabilizer pods apart when the tensioning means is operated to render the articulating arm in the rigid state to stretch the body tissue between the first and second suction pods.

18. The tissue-engaging device of Claim 1, wherein the suction member further comprises a suction pad diverging into a plurality of flexible appendages each having at least one suction port coupled to the suction member vacuum lumen and adapted to be applied against body tissue, the suction pad and appendages shaped to conform anatomically to an area of a body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing a medical procedure upon the body organ.

19 The tissue-engaging device of Claim 18, wherein the articulating arm further comprises:

an elongated flexible outer sheath having an outer sheath lumen extending between an outer sheath distal end coupled to the suction member and an outer sheath proximal end coupled to the articulating arm proximal end;

a plurality of interlocking articulating links within the outer sheath lumen, the articulating links each having mating link proximal and distal ends and a link bore extending between the link proximal and distal ends; and

an elongated tensioning cable extending through the articulating link bores between a cable proximal end and a cable distal end coupled to the suction member, whereby the aligned link bores provide the arm vacuum lumen alongside the elongated tensioning cable.

20. The tissue-engaging device of Claim 19, further comprising tensioning means coupled to the cable proximal end that is selectively operable to release tension in the tensioning cable to render the articulating arm in a flexible state enabling manipulation of the articulating arm into an operative shape and to impart tension to the tensioning cable to draw the mating link proximal and distal ends together to render the articulating arm in a rigid state and maintain the articulating arm in the operative shape.

21. A method of applying suction to body tissue accessed through an incision into a body cavity for facilitating a medical procedure comprising:

providing a suction-assisted, tissue-engaging device comprising:

an elongated articulating arm extending between an articulating arm proximal end and an articulating arm distal end enclosing an arm vacuum lumen coupled with a vacuum port for drawing a vacuum through the arm vacuum lumen, the articulating arm adapted to be manipulated in a flexible state into an operative shape and changed into a rigid state maintaining the operative shape; and

a suction member coupled to the articulating arm distal end having a suction member lumen coupled with the arm vacuum lumen extending to at least one suction port adapted to be applied against the body organ, whereby vacuum drawn through the vacuum port, the arm vacuum lumen and the suction port engages body tissue;

fixing the articulating arm proximal end to a fixed position in relation to the body tissue;

shaping the articulating arm into an operative shape disposing the suction port against the body tissue while the articulating arm is in the flexible state;

coupling the vacuum port to a vacuum source;

drawing a vacuum through the arm vacuum lumen and the suction member vacuum lumen to apply suction through the suction port to body tissue to grasp the body tissue; and

changing the articulating arm into the rigid state maintaining the operative shape.

22. The method of Claim 21, wherein the distal suction member further comprises first and second distally extending stabilizer pods each having at least one suction port adapted to be applied against body tissue and coupled to the suction member vacuum lumen, and further comprising:

spreading the stabilizer pods apart to stretch the body tissue between the first and second suction pods when suction is applied through the suction ports to the body tissue.

23. The method of Claim 22, wherein the arm vacuum lumen exhibits a vacuum leak when the articulating arm is in the flexible state and further comprising:

sealing the vacuum leak as the articulating arm is changed the from the flexible state to the rigid state.

24. The method of Claim 21, wherein the arm vacuum lumen exhibits a vacuum leak when the articulating arm is in the flexible state and further comprising:

sealing the vacuum leak as the articulating arm is changed the from the flexible state to the rigid state.

25. The method of Claim 21, wherein:

the articulating arm further comprises:

an elongated flexible outer sheath having an outer sheath lumen extending between an outer sheath distal end coupled to the suction member and an outer sheath proximal end coupled to the articulating arm proximal end;

a plurality of interlocking articulating links within the outer sheath lumen, the articulating links each having a link proximal end and a link distal end and a link bore extending between the link proximal and distal ends, the link proximal and distal ends of adjacent articulating links shaped to provide end-to-end articulation with the link bores aligned; and

an elongated tensioning cable extending through the articulating link bores between a cable proximal end and a cable distal end proximate the suction member, whereby the aligned link bores provide the arm vacuum lumen alongside the elongated tensioning cable; and

the changing step further comprises retracting the tensioning cable proximally to draw the link proximal and distal ends of adjacent articulating links into end-to-end contact that frictionally resists movement and maintains the articulating arm in the operative shape.

26. The method of Claim 25, wherein the arm vacuum lumen exhibits a vacuum leak when the articulating arm is in the flexible state and further comprising:

sealing the vacuum leak as the articulating arm is changed from the flexible state to the rigid state.

27. The method of Claim 26, wherein:

the articulating arm further comprises a resilient seal having a seal bore and fitted into a seal seat of an articulating link or non-articulating link distal to the cable proximal end with the tensioning cable extending through the seal bore;

and the sealing step comprises compressing the resilient seal against the tensioning cable and seal seat preventing any vacuum leak proximal to the seal seat during the changing step.

28. The method of Claim 27, wherein the vacuum port extends from the link bore of an articulating link or a non-articulating link disposed distal to the seal seat that the resilient seal is fitted into.

29. The method of Claim 28, wherein the resilient seal and seal bore are dimensioned with respect to the seal seat and the tensioning cable such that the resilient seal is compressible against the seal seat and the tensioning cable sufficient to reduce vacuum leak proximal to the seal seat as the tensioning cable is drawn proximally while the articulating arm remains in the flexible state allowing manipulation of the articulating arm into an operative shape.

30. The method of Claim 21, wherein the suction member further comprises a suction pad diverging into a plurality of flexible appendages each having at least one suction port coupled to the suction member vacuum lumen and adapted to be applied against body tissue, the suction pad and appendages shaped to conform anatomically to an area of a body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing a medical procedure upon the body organ.

31. A method of applying suction to body tissue accessed through an incision into a body cavity for facilitating a medical procedure comprising:

providing a suction-assisted, tissue-engaging device comprising:

an elongated articulating arm extending between an articulating arm proximal end and an articulating arm distal end enclosing an arm vacuum lumen coupled with a vacuum port for drawing a vacuum through the arm vacuum lumen, the articulating arm adapted to be manipulated in a flexible state into an operative shape and changed into a rigid state maintaining the operative shape, the elongated articulating arm exhibiting a vacuum leak from the arm vacuum lumen when in the flexible state; and

a suction member coupled to the articulating arm distal end having a suction member lumen coupled with the arm vacuum lumen extending to at least one suction port adapted to be applied against the body organ, whereby vacuum drawn through the vacuum port, the arm vacuum lumen and the suction port engages body tissue;

fixing the articulating arm proximal end to a fixed position in relation to the body tissue;

sealing the vacuum leak by changing the articulating arm from the flexible state into a sealed state;

coupling the vacuum port to a vacuum source;

drawing a vacuum through the arm vacuum lumen and the suction member vacuum lumen to apply suction through the suction port to body tissue to grasp the body tissue;

shaping the articulating arm into an operative shape disposing the suction port against the body tissue while the articulating arm is in the flexible state; and

changing the articulating arm into the rigid state maintaining the operative shape.

32. The method of Claim 31, wherein:

the articulating arm further comprises:

an elongated flexible outer sheath having an outer sheath lumen extending between an outer sheath distal end coupled to the suction member and an outer sheath proximal end coupled to the articulating arm proximal end;

a plurality of interlocking articulating links within the outer sheath lumen, the articulating links each having a link proximal end and a link distal end and a link bore extending between the link proximal and distal ends, the link proximal and distal ends of adjacent articulating links shaped to provide end-to-end articulation with the link bores aligned;

an elongated tensioning cable extending through the articulating link bores between a cable proximal end and a cable distal end proximate the suction member, whereby the aligned link bores provide the arm vacuum lumen alongside the elongated tensioning cable; and

a resilient seal having a seal bore and fitted into a seal seat of an articulating link or non-articulating link distal to the cable proximal end with the tensioning cable extending through the seal bore;

the sealing step comprises compressing the resilient seal against the tensioning cable and seal seat preventing any vacuum leak proximal to the seal seat.

33. The method of Claim 32, wherein:

the sealing step comprises retracting the tensioning cable proximally sufficiently to compress the resilient seal against the tensioning cable and seal seat preventing any vacuum leak proximal to the seal seat; and

the changing step further comprises further retracting the tensioning cable proximally to draw the link proximal and distal ends of adjacent articulating links into end-to-end contact that frictionally resists movement and maintains the articulating arm in the operative shape.

34. The method of Claim 33, wherein the vacuum port extends from the link bore of an articulating link or a non-articulating link disposed distal to the seal seat that the resilient seal is fitted into.

35. The method of Claim 31, wherein the distal suction member further comprises first and second distally extending stabilizer pods each having at least one suction port adapted to be applied against body tissue and coupled to the suction member vacuum lumen, and further comprising:

spreading the stabilizer pods apart to stretch the body tissue between the first and second suction pods when suction is applied through the suction ports to the body tissue.

36. The method of Claim 31, wherein the suction member further comprises a suction pad diverging into a plurality of flexible appendages each having at least one suction port coupled to the suction member vacuum lumen and adapted to be applied against body tissue, the suction pad and appendages shaped to conform anatomically to an area of a body organ to enable the body organ to be moved into and maintained in a non-physiologic position within the body cavity to facilitate performing a medical procedure upon the body organ.